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Fiscal Year 1991

July 1, 1990, to June 30, 1991

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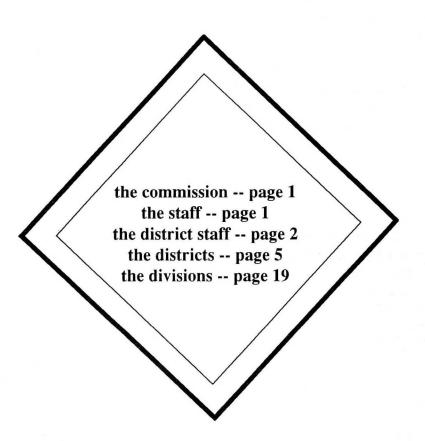
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Annual Report

Missouri Highway and Transportation Department



contents



the commission

The Missouri Highway and Transportation Commission is a six-member, bipartisan governing body for the Missouri Highway and Transportation Department. The governor with the Senate's consent appoints members to staggered, sixyear terms on the commission. No more than three commissioners may be of the same political party.

The commission appoints the chief engineer, chief counsel and commission secretary. The chief engineer with commission approval appoints all other appointments.

Missouri Highway and Transportation Commissioners ending fiscal year 1991

Don Walsworth

Chairman

Harry T. Morley

Vice Chairman

Carol Williamson

Member

John L. Oliver

Member

Thomas John Barklage

Member

James W. Gamble

Member

the staff

Missouri Highway and Transportation Department officials ending

fiscal year 1991

Wayne Muri

Chief Engineer

Walt Vandelicht

Assistant Chief Engineer

Frank Carroll

Assistant to the Chief Engineer

Design

Joe Mickes

Assistant to the Chief Engineer

Operations

Ray McCray

Assistant to the Chief Engineer

Administrative Services

Rich Tiemever

Chief Counsel

Mari Ann Winters

Commission Secretary

Al Laffoon

Division Engineer

Bridge

Gary Chullino

Division Engineer

Construction

Jim Roberts

Division Engineer

Design

Jiggs Miner

Director

Equipment and Procurement

Bob Drusch

Director

Fiscal Services

Roy Lilley

Director

Information Systems

Terry Porterfield

Internal Review, Audit and Systems

Dave Snider

Division Engineer

Maintenance and Traffic

Bill Trimm

Division Engineer

Materials and Research

Rich Millard

Director

Personnel

Phil Jackson

Division Engineer

Planning

Sue Muck

Director

Public Affairs,

Art Taylor

Director

Right of Way

Mel Sundermeyer

Director

Transportation

District 1

Northwest Area 3602 N. Belt Highway P.O. Box 287 St. Joseph, Mo. 64502 (816) 387-2350

District 2

North Central Area U.S. Route 63 P.O. Box 8 Macon, Mo. 63552 (816) 385-3176

District 3

Northeast Area Highway 61 South P.O. Box 1067 Hannibal, Mo. 63401 (314) 248-2490

District 4

Kansas City Area 5117 East 31st Street Kansas City, Mo. 64128 (816) 921-7104

District 5

Central Area 1511 Missouri Blvd. P.O. Box 718 Jefferson City, Mo. 65102 (314) 751-3322

District 6

St. Louis Area 329 S. Kirkwood Road Kirkwood, Mo. 63122 (314) 966-3800

District 7

Southwest Area 410 Range Line Road P.O. Box 1445 Joplin, Mo. 64802 (417) 629-3090

District 8

Springfield Area 3025 East Kearney M.O. Box 868 Springfield, Mo. 65801 (417) 866-3576

District 9

South Central Area U.S. Route 63 North P.O. Box 220 Willow Springs, Mo. 65793 (417) 469-3134

District 10

Southeast Area P.O. Box 160 Sikeston, Mo. 63801 (314) 472-5333

Missouri Highway and Transportation Department district engineers ending fiscal year 1991

Garry Chegwidden

Northwest Area District Engineer

Jim Jackson

North Central Area District Engineer

Dick Jones

Northeast Area
District Engineer

Bob Chappell

Kansas City Area District Engineer

Jim Toft

Central Area District Engineer

J.T. Yarnell

St. Louis Area District Engineer

Ken Stalcup

Southwest Area District Engineer

Willis Graven

Springfield Area District Engineer

Royce Fugate

South Central Area District Engineer

Freeman McCullah

Southeast Area District Engineer







District 1 St. Joseph District 1 consists of 12 counties in northwest Missouri; the district office is in St. Joseph. There are about 485 employees working in seven departments.

The Maintenance and Traffic

Department is divided into 10 areas, which are comprised of 32 subareas across the district. These subareas performed routine maintenance work and specialized work such as replacing cross-road pipes and repairing bridge decks. The new Gallatin maintenance lot was graded, and contracts were let for the construction of the maintenance buildings. Grading was performed to prepare for a new 4,000-ton salt dome at Cameron.

Temporary traffic signals were constructed in St. Joseph at Route YY and Woodbine, and signals were installed at the Junction of 69 and 136 in Bethany. The Adopt-A-Highway program continued to grow, and as of June 30, 1991, 402 groups were enrolled in the program.

The department established a cooperative agreement with Western Missouri Correctional Center at Cameron to allow incarcerated personnel to perform various duties on the state highway system. These duties included collecting litter, putting rock around guardrails, planting seedling trees and doing other beautification projects.

District 1 has three resident engineer offices. They are in Maryville, St. Joseph and Cameron. Major construction projects included the following:

Interstate 35, Daviess County — resurfacing; Route 59, Buchanan County — resurfacing, bridge rehabilitation;

Route 169, Buchanan County — relocation of route, bridge replacement;

Route 116, Caldwell County — resurfacing; Route 69, Daviess/DeKalb counties resurfacing;

Route 36, DeKalb County — construct interchange at Route 69; and

Route B, Andrew County — resurfacing, bridge rehabilitation.

There were nine projects awarded in District 1 totaling \$14,524,895 in construction costs. In addition, nine county road bridges with bids totaling \$2,798,000 were let under the Off System Program monitored by the district

liaison engineer.

The Equipment and Procurement Department maintains the district's equipment including 45 passenger vehicles, 40 pickups, 200 trucks (mainly dump trucks) and 280 pieces of off-road equipment. This fleet equals an investment of about \$10.9 million. The district spends about \$.7 million yearly for parts. Operating costs for the 12-county area are about \$2 million yearly.

The Materials and Research Department samples and tests all materials used in the maintenance and construction of roadways. This work determines compliance with the department's specifications and insures only high-quality products are used. Materials and Research personnel have various areas of responsibility that include the following:

(1) designing and monitoring Portland cement concrete and asphaltic concrete mixtures;

(2) sub-surface investigations required for highway and bridge design;

(3) investigating and monitoring the performance of new materials and/or products for use in the department; and

(4) sampling and testing for the Federal Highway Administration (FHWA).

Aggregate quality control is a large part of this department's duties. During fiscal year 1991, materials personnel inspected 740,250 tons of various types of aggregate.

The Right of Way Department has five employees. This department acquires right of way for projects, maintenance lots or other department projects. It also handles the sale of excess property for the district.

he Fiscal Services department's duties include payrolls, time sheets, overdimension permits, inventories and bids on excess equipment. Fiscal Services personnel handle the following: typing, processing incoming and outgoing mail, personnel matters, insurance, maintenance of the district office and garage, the writing of the district report for and distribution of the Highway and Transportation News, appointments, phone calls, expense checks and overtime and salary checks.

The District 1 Credit Union, workers' compensation claims, and insurance and retirement matters are this department's responsibilities.

District 1 conducts cardiopulmonary resuscitation/first-aid classes and commercial drivers' training for employees. Pre-retirement meetings and service award dinners are held each year for employees. The district also held a

meeting for retirees to inform them of department changes and happenings.

District 1 has had 14 employees selected as department Employee of the Month awardwinners.

The district also has many activities such as the annual Employees' Association softball tournament to raise money for a needy family at Christmas, pitch tournaments and steak dinners for employees who are retiring.

istrict 2 oversees highway activities in north central Missouri. The 14 counties of District 2 are Adair, Carroll, Chariton, Grundy, Howard, Linn, Livingston, Macon, Mercer, Putnam, Randolph, Saline, Schuyler and Sullivan. These 14 counties contain more than 8,000 square miles. Within this 8,000 square miles are 3,746 miles of highway — 24 miles of interstate, 733 miles of primary and 2,989 miles of supplementary roads.

Eleven maintenance areas with 32 buildings maintain this large road system. In addition, there are five special crews in two locations to handle tasks such as signing, striping and bridge and pavement repair. District 2 has 314

maintenance employees.

The Design Department has 28 employees, which are headquartered at the district office in Macon. The district office also has the Right of Way Department with eight employees, the Fiscal Services Department with 11 employees and the Equipment and Procurement Department with 28 employees, which includes 15 field mechanics assigned to the district's maintenance buildings.

Of the nine Materials and Research Department employees in District 2, two are at Marshall. Their main duty is to inspect precast bridge beams at the Quinn precast plant. Most precast bridge beams for Missouri highway projects originate here. The two District 2 inspectors make sure the beams are built according to department plans and specifica-

Three resident engineers working from four offices manage the district's construction work. Major construction projects include the following:

*four-laning Route 63 south of Macon;

*relocating a portion of U.S. 65 in southern Mercer County:

*replacement of the bridge over the Soo Line railroad on U.S. 65 south of Chillicothe; and *many smaller bridge and resurfacing jobs.

There are 51 construction employees. In all, District 2 has 450 employees.

District 2 has an active and proud history of dedicated and involved District 2 employees. One of the earliest MHTD Employees of the Month was Maintenance Superintendent Norman Mears, who is retired. Mears was also selected a state Employee of the Month. Mears was instrumental in achieving the district's safety record, which has been the best in the state for many years.

The district encourages civic and service groups to participate in the Adopt-A-Highway Program. As of June 30, 1991, there were 332 groups adopting 641 miles of highway. One adoption is for a section of 10 miles or longer; the average adopted section is nearly two miles. District employees have spent many hours explaining the program at meetings and making adoption presentations.

Macon

District 3 Hannibal

District 3, head-quartered at Hannibal, encompasses the area of Audrain, Clark, Knox, Lewis, Lincoln, Marion, Monroe, Montgomery, Pike, Ralls, Scotland, Shelby and Warren counties. Within its jurisdiction, District 3 has 3,609 miles of two-lane highways. In all, work at the Hannibal district. The

403 people work at the Hannibal district. The district has 10 subareas, 38 maintenance buildings and two resident engineer offices at Hannibal and Mexico.

The district's construction projects include the following:

*Route 54 in Audrain County, \$1,274,299 — grading, guard rail, drainage and constructing bridges from the Callaway County line to Route D; 3.722 miles; completed 10/4/90.

*Route 6 in Knox County, \$827,718 — cold milling, bridge deck rehabilitation and asphalt resurfacing from Route 15 (south junction) east to Lewis County; 13.027 miles; completed 10/22/90.

*Route 6 in Knox County, \$8,135 — asphalt resurfacing from 2nd Street to 5th Street in Edina; 0.192 mile; completed 9/27/90.

*Route 15 in Knox County, \$899,509 — asphalt resurfacing and bridge rehabilitation from Route 6 (south junction) south to Shelby County line; 18.913 miles; completed 10/22/90.

*Route 61 in Ralls County, \$3,087,194 — grading, drainage, bridge and interchange construction; from 0.7 mile north of Route 19 to 0.4 mile south of Route 19; 1.132 miles; completed 6/6/91.

*Route W in Audrain County, \$231,650 — asphalt resurfacing from Route 54 to Route WW; 3.468 miles; completed 6/18/91.

*Route E in Lincoln County, \$427,316 — bridge rehabilitation and asphalt resurfacing from east of Route UU to Route 61; 5.173 miles; 82 percent complete.

*Route W in Marion County, \$205,260 — shaping shoulders, guardrail, pavement repair and asphalt resurfacing from Route 61 to Route N in Hannibal; 17 percent complete.

*Route 15 in Shelby County, \$778,028 — bridge rehabilitation and asphalt resurfacing from Knox County line to Route 168 in Shelbyville; 12.034 miles; 40 percent complete.

*Route 54 in Audrain County, \$2,369,057

— constructing a bridge and concrete pavement from Callaway County line north to Route D; 3.722 miles; 15 percent complete.

*Route 61 Business Loop in Pike County, \$370,187 — cold milling, bridge rehabilitation and asphalt resurfacing from Route 61 to Route 161 in Bowling Green; 2.828 miles; 6 percent complete.

The District 3 Materials and Research Department is responsible for the inspection of material from 35 quarries, eight sand producers, one mineral-filler producer, three cement plants and two asphalt cement terminals. In 1991 1,327,951 tons of aggregate, 39,571 tons of cement and 5,815,153 tons of asphalt were inspected.

Inspection was also provided at a precast facility and two prestress/precast plants where temporary barrier curb, drop inlets, manholes, earth panels and prestressed bridge girders and deck panels are produced.

A total of 719 identification numbers were assigned in 1991. This includes general material samples submitted to MHTD's central laboratory for further testing, trial mix material and material reports. Soil survey reports were completed for five construction projects.

District 3's territory has some unique features. For example, in District 3 the scenic Great River Road follows Route 79 from Hannibal to Old Monroe, and the Lewis and Clark Trail follows Route 94 in Warren and Montgomery counties. The Mark Twain Lake and Clarence Cannon Dam are major recreational attractions in District 3.

The district office and garage buildings were modified, and the Computer-Aided Drafting and Design (CADD) system was implemented fully.

As of June 30, 1991, District 3 had 393 groups enrolled in Missouri's Adopt-A-Highway program.

District 4 oversees the highway and transportation system for west central Missouri. It is headquartered in Kansas City at 5117 East 31st Street.

The district is made up of eight counties: Cass, Clay, Henry, Jackson, Johnson, Lafayette, Platte and Ray. The district has 39 administrative personnel, 117 construction personnel, 69 design employees, 34 equipment and procurement employees, seven legal employees, 375 maintenance and traffic personnel, 27 materials and research employees, one employee from personnel, one employee from risk management and 17 right of way employees. In all there are 687 District 4 employees.

The Maintenance and traffic Department maintains 2,733 miles — 202 miles of interstate, 569 miles of primary and 1,696 miles of supplementary roads and 265 miles of outer roads. There are 39 maintenance buildings under the supervision of nine area supervisors and nine special maintenance supervisors.

Maintenance and Traffic administered a total of 729 Adopt-A-Highway permits. MHTD built a new maintenance facility at Independence. A new bulk silo was installed at 18th and Indiana for hauling bulk cement for bridge deck patching, and a bulk paint facility was built at the Stadium Complex for pavement marking paint.

The Construction Department has seven resident engineer offices. The major project under way is the Bruce R. Watkins Drive. The project's estimated cost is \$200 million; it is scheduled to be completed in 2002. The project's total length is 10 miles. Three offices have new department-owned buildings with more workspace and two bay garages.

The Design Department has eight squads preparing plans for roadways. This department also prepares all agreements and administers various programs with county and city governments. District 4's Design Department is working with the city of Kansas City to develop a special project at the Bruce R. Watkins Drive (formerly known as the South Midtown Roadway). There will be extensive landscaping, aesthetically enhanced bridges and a jogging trail. This a a good example of what city/state cooperation can achieve.

Right of way valued at nearly \$2,356,000 was acquired during the fiscal year, and relocation benefits amounting to \$138,745 were paid to parties affected by district projects.

The materials and research staff inspects materials used in the district's construction

and maintenance programs to assure that quality materials are used. Inspection of materials for other districts is also provided.

The district counsel's office is comprised of a district counsel, a senior assistant counsel, two assistant counsels, one paralegal and three legal secretaries. The office is re-sponsible for preparing, filing and defending cases on behalf of the Highway and Transportation Commission in the 20 county circuit courts in districts 4 and 1.

District 4

Kansas City

The district counsel's office manages approximately 160 court cases each fiscal year. The types of cases handled by the district counsel's office include condemnation, workers' compensation, general liability, fleet vehicle liability, property damage, inverse condemnation and various miscellaneous cases. During the 1991 fiscal year, the district counsel and assistant counsels condemned land for right of way for six construction projects, tried and settled 20 condemnation cases, settled 28 workers' compensation cases and tried or settled 26 other types of cases.

The district has 698 pieces of equipment that are maintained by 17 field and five shop mechanics.

he Personnel and Fiscal Services Departments offer support services for the district.

District 4's American Red Cross Standard First-Aid Program trained an additional 139 employees and recertified another 105 employees in Adult CPR. Two of these individuals have used their first-aid skills in live-saving emergencies and have received the American Red Cross Certificate of Merit Award.

Service awards honored 69 employees with 1,365 total years of service.

The district's second Chat With the Chief was held March 26, 1991, with 51 employees meeting Chief Engineer Wayne Muri at Fleming Park near Lake Jacomo.

District Engineer Bob Chappell hosted a meeting for nine department retirees at the district office. Chappell gave an overview, and the department heads gave a brief presentation on activities in their areas.

The district hosted secretaries from districts 1, 7 and 8 for two days of "Professional

Secretary" training along with 13 District 4 employees.

Materials and Research and Construction employees remodeled the district office basement east wing. The finished project provides a district conference room and offices for the District Counsel staff, Right of Way appraisers, Personnel Office and Credit Union.

District 5 Jefferson City

offices.

District 5 has eight departments including fiscal services, legal, equipment and procurement, maintenance and traffic, construction, design, right of way and materials and research. The district has approximately 515 employees. There are 11 maintenance areas, 43 subarea buildings, six special crews and four construction project

The district covers a land area of 7,787 square miles and encompasses the 13 counties of Benton, Boone, Callaway, Cole, Camden, Cooper, Gasconade, Maries, Miller, Moniteau. Morgan, Osage and Pettis including the Lake of the Ozarks area and the cities of Sedalia, Columbia and Jefferson City. The district oversees 78 interstate miles, 819 miles of primary system highways and 2,558 miles of supplementary system roads.

The major construction projects in District 5 are as follows:

*Route 127, Pettis County — replace a box culvert in LaMonte:

*Route HH, Camden County — relocation for 1/2 mile with signals;

*Route I-70, Callaway County — widen twin bridges with signals at Route 54 interchange;

*Route 54, Camden County — resurface 3.5 miles from east of Hickory County to east of Route 73;

*Route 73, Camden County - widen and resurface from Route 54 to Dallas County with new intersection with Route 54;

*Route 52, Morgan County — resurface from north junction Route 5 to Miller County;

*Route Business 54, Miller County - resurface from Route 52 east to Route 54 (Eldon);

*Route 52, Miller County — resurface from Business Route 54 to Route 54 in Eldon;

*Route I-70, Callaway County — resurface and pavement repair from 1/2 mile west of Route D to Montgomery County (westbound lane):

*Route 54, Callaway County — resurface 6.8 miles from north of I-70 to Audrain County;

*Route 54, Callaway County — resurface 4.9 miles of westbound lane from Route 63 north junction to 0.3 mile south of Route OO;

*Route 54, Callaway County — widen and rehabilitate bridge over Katy Trail (westbound lane):

*Route 54, Cole County — grading, paving, bridges, lighting and signals from 0.1 mile south of Route 50 to south end of Missouri River Bridge:

*Route I-70, Cooper County — resurface 3.5 miles of westbound lane from 0.5 mile west of Route K to Lamine River:

*Route 54, Callaway County — two, 24-foot pavements and signing from north of I-70 to Audrain County;

*Route I-70, Boone County — widen bridge and modify interchange at Lake of the Woods;

*Route 54, Cole/Callaway counties - Missouri River Bridge, deck, paint and miscellaneous; and

*Route 54, Callaway County — Cedar City interchange.

As of June 30, 1991, District 5's Adopt-A-Highway program had 564 adoptions with more than 890 miles adopted in the district's 13 counties. Growing Together, a beautification program that combines the resources of cities and industry with the involvement of MHTD and incarcerated personnel, continues to expand.

District 6, which is headquartered in Kirkwood, has established the following mission statement: "Our mission is to provide the St. Louis metro area with a quality transportation network meeting today's demands and tomorrow's expectations." The district, which employs more than 800 people, is committed to achieving this mission. With the introduction of the total quality management philosophy into the department, the district has found many new ways to work together effectively and efficiently. Many employees are involved in the process as trainers, facilitators and team members.

Besides trying to work together better internally, the district is attempting to improve its relationship with the public. Many department employees have spent hours speaking with high school students, area businesses, governmental agencies and service organizations in the metropolitan area. In addition, the district formed a citizens advisory committee to participate in the planning process for the controversial Route 109 improvement. By involving citizens in the early stages of the project, the district hopes to develop an improvement acceptable to all.

District 6 is responsible for maintaining 1,475 miles of roadway in St. Charles, St. Louis, Jefferson and Franklin counties and the city of St. Louis.

The Maintenance and Traffic Department includes 29 maintenance buildings supervised by nine area supervisors. An additional 12 supervisors oversee operations such as signals, lighting, striping, landscape and special repairs. Besides the district's miles of roadway, maintenance and traffic employees are responsible for 656 signal installations.

The department also oversees the Adopta-Highway program. As of June 30, 1991, 820 groups had enrolled in the program. The district, with its three landscape crews, has received many compliments on recent efforts to enhance area landscaping.

The construction department has 10 resident engineer offices staffed by approximately 180 engineers and technicians. During the past year, this District 6 department has been busy with several major projects that should be completed during fiscal year '92.

One of those projects is the new Route 115 highway and bridge from Interstate 270 in St. Louis County to Route 94 in St. Charles County. This project included a first for the department, the "floating-in" of a truss

span. Because of District 6 requirements to keep St. Louis the river channel open to barge traffic, the department was unable to construct this bridge's truss in place. Instead, the truss was erected on falsework and moved by barge into place when it was completed. The event was spectacular and drew hundreds of spectators. Work will begin in April 1992 on the extension of the Route 115 project, which will take the route from Route 94 to Interstate 70.

The fiscal year also saw much progress on the new interchange at Route 40 and Interstate 270 in west St. Louis County. The project is slated for an early 1993 completion.

The design department has 12 squad leaders and more than 60 engineers and technicians.

District 6 was very proud to have Kevin Keith, assistant district construction engineer, and Irene Kratzer, design clerk, named as employees of the month.

District 7 Joplin

District 7, headquartered in Joplin, has 415 full-time employees: 20 administrative, 37 construction, 26 equipment and procurement, 275 maintenance and traffic, nine materials and research, eight right of way and 40 design. Approximately 55 temporary employees and 33 summer students were employed during 1991.

The district has 37 maintenance buildings. The Joplin Maintenance Building and sign and signal shop have been relocated to the new district office complex. There are three resident engineer offices located at Neosho, Carthage and Nevada.

The district maintains 3,331 miles of highway; this includes 60 miles of interstate, 729 miles of primary and 2,542 miles of supplementary roads.

The district striping crew completed more than 6,000 miles of striping this year and moved into its new building with the signing crew. The striping crew operates with waterbased acrylic paint and high-heat paint in two stripers. The district maintains more than 42,000 signs with each inspected annually.

Permit inspectors issued 1,016 permits. Of the 1,016, 73 were for commercial entrances, 192 for private entrances and 751 for excavation permits.

District 7, the southwest district, encompasses the 11 counties of Barry, Barton, Bates, Cedar, Dade, Jasper, Lawrence, McDonald, Newton, St. Clair and Vernon.

Major construction projects in District 7 during the period of July 1, 1990, to June 30, 1991, included the following:

*BRS-907(4) in Lawrence County — grading. bridge replacement and asphaltic concrete resurfacing on Route Y in Mt. Vernon.

*RS-913(4) in Lawrence County — grading, intersection revisions and asphaltic concrete resurfacing in Marionville.

*BRF-82-1(6) in St. Clair County — grading, bridge replacement and resurfacing on Route 82, 2.5 miles south of Route O.

*RS-BRS-905(4) in Lawrence County widening asphaltic concrete resurfacing, bridge rehabilitation and replacing two bridges on Route H from I-44 Outer Roadway east to I-44 west of Mt. Vernon.

*F-160-1(17) in Barton County — widening, resurfacing, aggregate shoulder and bridge rehabilitation on six bridges on Route 160 from Kansas state line to Route 71.

*DE-BO11(804) in Jasper County — grading. base widening, resurfacing and concrete pavement on Route 71 Alt. from 1.5 miles south of Route HH to 1.0 mile north of Route I-44.

*F-BHF-60-1(10) in Newton County — grading, replace bridge with box culverts and asphaltic concrete resurfacing on Route 60 from 0.4 mile east of Route 7l Alt. east to 0.3 mile west of Route W and M.

As of June 30, 1991, the district had 431 Adopt-A-Highway groups covering 705 miles for litter pickup, mowing and beautification and two Growing Together projects.

District 8 encompasses a 12-county area with 3,648 miles of state highways. The district boundaries extend north including Hickory County, which includes the Pomme De Terre Lake area. To the east are Laclede, Webster, Wright and Douglas counties. They include the cities of Lebanon, Mountain Grove and Ava. To the south, District 8 runs to the Arkansas state line. This area includes the Ozark Mountain region, home of Branson and the lakes area.

The Ozark Mountain Region is southwest Missouri's leading tourist attraction with the Branson area expecting more than 4.5 million tourists this year. District 8's main metropolitan area is Springfield with a population of approximately 150,000 people.

District 8 has 462 employees with most employees working from 39 maintenance buildings throughout the district and project offices in Springfield and Buffalo.

The district office appearance continues to stand out because of the building maintenance and roadside enhancement crews' efforts.

Maintenance Worker Kevin Clayton was named MHTD's July 1990 Employee of the Month, and District Auditor Vicki Hutchings was named September 1990 Employee of the Month.

The District 8 Design Department received national recognition from the Federal Highway Administration (FHWA) for achievement in design work. District 8 received FHWA's 1990 Biennial Award for Excellence in the Design of a Highway Facility in the category of pavement rehabilitation/reconstruction. The winning design was for the project improving Route 76 in Stone and Taney counties west of Branson. This project marks the first time that MHTD has won in this FHWA category.

The district's construction season was busy, especially in the Branson area. A 20-mile section of Route 65 north of Branson was resurfaced and restriped to provide climbing lanes.

In the Springfield area, construction continues on the James River Freeway, which is tentatively scheduled for completion in October 1991.

Other major construction projects are as follows:

- *Interstate 44 Greene County:
- *Interstate 44 Laclede/Webster counties:
- *Route 65 Dallas County;
- *Route 73 Dallas County;

*Route 744 — Greene County:

*Route 76 — Stone County;

*Route 5 — Laclede County:

*Route 83 — Polk County:

*Route F — Taney County: and

*Business Route 60 — Wright County.

The Adopt-A-Highway program continues to be a great success in the Ozarks. As of June 30, 1991, 638 groups had adopted a portion of District 8 highway through the program. Work also started on the four Growing Together projects in the district. Growing Together is a cooperative beautification program between the department and state and local governments, civic groups or others.

District 8
Springfield

/ District 9 Willow Springs

District 9, headquartered in Willow Springs, encompasses the 13-county region of Carter, Crawford, Dent, Howell,

Iron, Oregon, Pulaski, Phelps, Ripley, Reynolds, Shannon, Texas and Washington counties. The district's Maintenance and

Traffic Department has an authorized staff of 11 office and 286 field personnel. They maintain the largest district in the state, which includes 3,726 miles of roadway. Of this, 78.5 miles are interstate; 1,048 miles are primary routes, and 2,599 miles are supplementary routes. These routes are maintained from 36 maintenance and three special crew buildings, which are divided into 11 sub-areas.

The Adopt-A-Highway program has become increasingly popular in the District 9 region. As of June 30, 1991, 310 groups had signed their adoption papers in District 9.

The Construction Department in District 9 has 52 employees. In 1991, the following major projects were completed:

*widening Business Route 60 in Mountain Grove;

*two bridge replacements on Route 8 and Route 19 in Steelville;

*bridge replacement on Route 21 north of Centerville;

*bridge replacement and shoulder widening with resurfacing on Route 32 in Iron County;

*signal replacement and widening on Interstate 44 Spur at St. Robert;

*bridge rehabilitation on Route 63 south of Houston; and

*bridge replacement on Route C in Washington County.

The bridge over the Current River on Route 160 in Doniphan was opened to traffic. Various asphalt overlays were in progress throughout the district.

The Right of Way Department's eight employees have been in the real estate business during fiscal year 1991. They acquired right of way for highway construction totaling \$607,270. This included 65 parcels — 62 by negotiation settlement and three by condemnation or 95 percent by negotiation and 5 percent by

condemnation.

Payments totaling \$209,912 were made this year under the Relocation Assistance and Payment Program to assist displaced families in relocating. During fiscal year 1991, 25 relocation claims were processed and paid. Also, appraisals were obtained on 108 parcels. Ten percent of these required a second appraisal. Receipts from sale of land acquired for future construction earned \$1,700.

The District 9 Design Department has 27 employees. Currently they are designing 68 projects. Major projects include the upgrading of Route 60 from Willow Springs east in several locations including a new bridge over the Current River at Van Buren. Route 63 is being upgraded near West Plains.

The Fiscal Services Department has eight office personnel and two maintenance personnel. They handle payment of payrolls and commercial and equipment invoices. They're also responsible for daily and monthly reports from the maintenance buildings and construction offices. Further responsibilities include life and health insurance, workers' compensation, credit union, building maintenance and district correspondence.

The District 9 Equipment Division has 32 employees: 18 field mechanics and helpers, 11 shop personnel and three stockroom employees. In the 13-county district, they take care of about 546 units including 45 cars, 44 pickups and carryalls, 195 trucks, 87 tractors, 43 loaders, 39 distributors, 48 motorgraders and 45 other units. The stockroom personnel oversee a parts and supplies inventory of \$324,776 and have an average monthly sale of \$31,000.

The Materials and Research Department has 10 employees. They inspect 17 quarries, 112 gravel sources and 11 ready-mix plants. In fiscal year 1991, they inspected 442,793 tons of aggregate including 288,693 tons of crushed stone; 122,620 tons of gravel; 28,608 tons of sand and 2,872 tons of porphyry.

Materials personnel inspected 2,034,088 gallons of emulsified asphalt. Many materials such as calcium chloride, sodium chloride, paint, corrugated metal pipe, reinforced concrete pipe and others were inspected, too.

District 9 has had two Employees of the Month. Bob Woodring, district highway

design engineer, was the October 1983 honored employee. Steve Hutchison, field mechanic, was the May 1986 Employee of the Month.

The district office employees are now enjoying the new district office building. Nestled in the midst of the scenic Ozarks, the exterior is constructed of natural rock. The interior is

rom 1921 through 1987, District 10 encompassed the counties of Scott, New Madrid, Mississippi, Pemiscot, Dunklin, Ripley, Butler, Wayne, Stoddard, Bollinger, Cape Girardeau and Madison. With the realignment of the district in 1988, the counties of Perry, Ste. Genevieve and St. Francois were added to the district territory. Ripley County was transferred to District 9; however, District 10 kept the Naylor Maintenance Building in Ripley County. Now the district consists of 14 counties in southeast Missouri, covers 7,984 square miles and has 3,858 road miles.

District 10 has approximately 534 full-time salaried employees. During fiscal year 1991, nine employees retired; 23 permanent employees were hired. Two employees transferred from the district. Four employees resigned. No employees were released, and two employees died. The district hired 48 college students and 23 seasonal maintenance workers.

The District 10 Highway and Transportation Employees' Credit Union, managed by the district personnel services agent, serves the financial needs of the state Highway Patrol and Highway and Transportation Department members. Total membership was 926 with total assets of \$4,029,335.04. During the past fiscal year, 312 loans totaling about \$1,149,103.00 were processed.

District fiscal services employees processed about 7,308 checks to suppliers; checked and extended totals on more than 11,500 daily crew reports; added more than 630 items to the tool inventory; took inventory at 36 maintenance buildings, five resident engineer offices and the district office; and verified that 3,555 pieces of equipment were in service and tagged properly. In all, 630 new items were inventoried, and 575 items were deleted from the inventory. Also, material, petroleum and capital investment inventory were taken at all maintenance buildings. Other items included processing commercial invoices, physical inventories and usage reports for 806,000 gallons of petroleum

spacious and lovely in its rose and gray decor.

District 9 has been busy with new innovations. The installation of bulk tanks for beads and paint, for instance, has made the new water-based paint striping program a great success.

District 10

Sikeston

products.

Fiscal services employees verify time for personnel including full time, temporary, seasonal and overtime.

This department also processed 102 property damage claims, 73 auto liability claims and 103 new workers' compensation claims. Fiscal Services issued about 844 overdimension permits from June 30, 1990, to July 1, 1991.

The Right of Way Department is located about a half-mile from the district office. It has 10 employees. This department has acquired 32 parcels on nine projects with 31 parcels negotiated and one condemned. Also, the district processed right of way relinquishments on many excess parcels of land and made appraisals on changes of access.

The Materials and Research Department inspects the materials used to construct and maintain District 10 highways. Materials had 13 full-time and two summer employees during fiscal year 1991.

Materials has many projects where employees are performing independent assurance sampling and federal-aid sampling and testing. They verify that the job control or acceptance inspector follows proper test procedures and that the equipment being used for acceptance testing is working correctly. This testing is performed only on federal-aid projects.

The district soils and geology technologist completed 11 soil surveys, sampled 13 quarries and investigated numerous slides.

The Materials and Research Department is helping on a statewide research project called Life Expectancy Determination of Corrugated Metal and Reinforced Concrete Pipe. The project will compare these two types of roadway crossroad drainage pipe.

Materials and research personnel have inspected various materials for the district

Maintenance Department such as glass beads, brush and weed killers, grader and maintainer blades, sodium and calcium chloride for ice control, paint, anti-freeze, gear oil and grease, hydraulic fluid, lubricating oil, asphalt and various aggregates.

In District 10, personnel inspected the following quantities: various aggregates — 1,127,771 tons; cement — 38,192 tons; asphalt - 6,105,665 gallons; black and epoxy coated reinforcing steel — 1,354,734 pounds; corrugated metal pipe — 55,391 linear feet; reinforced concrete pipe — 1,102 linear feet; plastic joint compound — 1,200 pounds; reinforced concrete I-girders - 310; reinforced double teegirders — 91; reinforced bridge deck planks -2,368; precast concrete median barriers - 302 linear feet; traffic signals — 22 poles, 23 arms, 36 anchor bolts; pull boxes — 7; PVC conduit and water lines - 4,009 linear feet; guard rail and fencing — 39,050 linear feet; fertilizer — 1,913,120 pounds; paint -2,040 gallons; welded wire fabric — 500,451 square feet; and calibration of concrete R/M plants -16.

The Design Department has 50 employees with five design squads and two field survey crews. Twelve projects totaling 33 miles were let for contract during fiscal year 1991 at a cost of \$15,472,000. Three design plans were completed and made ready for contract during the fiscal year. These plans totaled 2.2 miles at a cost of \$3,659,000. In all, the district handled 15 design plans costing \$19,131,000 for a total of 35 miles.

Projects are on all systems, and costs range from \$29,000 to more than \$14,991,565. Three new bridges, 14 bridge rehabilitations and one bridge widening are included. This work involves about 30 miles of resurfacing at a cost of about \$7,144,000.

Not included in the above tabulation are plans for 158.8 miles of maintenance contract leveling course projects costing more than \$2,781,000. When added to the above tabulation, the total construction cost of projects for which plans were let for contract and projects for which plans are complete total more than \$21,912,000. This figure does not include right of way costs.

he District Design Department has reviewed the federal-aid, off-system bridge program including six structures amounting to about \$1,895,000. Also federal-aid urban (FAU) funds of almost \$599,400 have been processed during the past year.

Design personnel have assisted with eight groundbreaking and four ribbon-cutting ceremonies.

A slide repair project on Route 77 in Scott and Cape Girardeau counties consisted of removing the bridge fill slopes, mixing them with lime and repairing the slopes.

On Interstate 55 in Ste. Genevieve at the rest area north of Bloomsdale, new comfort stations, picnic facilities and additional parking spaces were provided. Also on this project, high mast lighting was used to illuminate the rest area at night.

At the I-57 and Route 105 interchange in Mississippi County, new lights were provided.

On Route E in Pemiscot County, a bridge was replaced over Drainage Ditch No. 5. This project is part of the Corps of Engineers plans to widen ditches in the St. Francois Basin and was funded by the Corps.

he Construction Department has five resident engineer offices and 71 employees. Sixteen employees work at Flat River, 16 at Jackson, 16 at Sikeston, 14 at Poplar Bluff and seven at Kennett. There is one district final plans and reports processor.

Forty-four projects were active during fiscal year 1991. They totaled approximately \$18,252,930. Thirty-two of those projects were contract leveling projects.

Some major projects are as follows: *Route 34, Cape Girardeau County, \$1,143,291.15;

*I-55, Ste. Genevieve County Rest Area, \$2,308,075.42;

*Route 77, Scott/Cape Girardeau counties, slide repair;

*Route 67, St. Francois County, \$4,991,565.61;

*Route 62, New Madrid County, \$1,375,046.67;

*Route 51, Perry County, \$358,995.26; and *Route E, Pemiscot County, \$768,993.89.

During this fiscal year, the Construction Department had the following task forces and quality circles: structures, bituminous, resident engineers, quality improvement, freight/ mail system, construction reports and submittals.

The Maintenance and Traffic Department has 12 areas, 36 sub-areas and special crews in Sikeston with about 360 employees.

The district ranks first in highway miles and third in land area. District 10 has 198

miles of interstate, 742 miles of primary and 2,918 miles of secondary roads.

The following is the breakdown by county of the 1,366 state highway system bridges maintained by District 10: Bollinger — 61; Mississippi — 62; Ste. Genevieve — 64; Butler — 109; New Madrid — 142; Scott — 97; Cape Girardeau — 140; Pemiscot — 118; Stoddard — 161; Dunklin — 107; Perry — 50; Wayne — 117; Madison — 60; and St. Francois — 78.

n the past year, the district resurfaced 132 miles of highway with one-inch, machine-laid hot mix leveling course. Maintenance forces resurfaced about 192 miles of road with a cold mix leveling course. District 10 used 107,000 yards of mix to patch and make routine surface repairs. It also mowed 43,000 acres of right of way.

District 10 administers the Adopt-A-Highway program in its region. As of June 30, 1991, the district had 378 groups in the program.

Maintenance and traffic employees installed two new signals and replaced four controllers. There were 29 new mobile radios and 18 replacements added to the fleet.

Snow and ice removal operations were well below normal because of a mild winter. Roadway flooding and other weather- and nature-related repairs were about normal. Concrete deck repair was about normal this fiscal year. The last part of summer 1990 and the early part summer 1991 were both heavy concrete repair periods.

he District 10 Equipment and Procurement Department maintains and repairs more than 700 pieces of equipment. Besides normal equipment maintenance, there have been several equipment modifications implemented. The district purchased 18 new trucks, 13 new tractor mowers, six four-wheel drive loaders, six backhoe trailers, 13 pickup trucks and 13 new passenger cars during fiscal year 1991.

Three stockroom employees in the procurement section issue local purchase orders, order parts and supplies on requisitions or job tickets, check commercial invoices against purchase orders and code items for payment. They post inventory records and make sure they balance monthly, charge labor from job tickets, prepare garage invoices and keep district tire, battery, gas, oil and other records.

Maintenance employee Larry Boyer was recognized by the governor's office for his outstanding contributions in highway beautification. Maintenance employees
Raymond Crawford, Dan Faulkner and Charles
Clark received recognition for their employee
suggestions. Crawford suggested the department could better serve the traveling public by
placing electric dryers in the rest areas, while
Faulkner and Clark invented a portable striping
unit currently under evaluation.

As part of the department's concern for the health and welfare of its employees, District 10 has participated in an in-house cardiopulmonary resuscitation (CPR) and first-aid training session sponsored by the American Red Cross. This district has nine instructors who certified 146 employees.



Bridge Division

The Missouri Highway and Transportation Department
Bridge Division is responsible for the design, estimating and special provisions, rating and shop inspection of the state highway system bridges.
The division also reviews bridge replacement plans funded through

Bridge Replacement Off-System and Federal Aid Urban monies.

During fiscal year 1991, the division completed 89 new bridge and retaining wall designs for letting. Of this number, 72 were designed for major system routes and 17 for supplementary routes.

The total length of new structures contracted during the fiscal year was 15,396 feet at a cost of \$36,671,532. Of these amounts, 2,963 feet were contracted at a cost of \$3,765,065 for the supplementary system.

In addition to the new structure designs, 86 designs were contracted for repairing, widening or extending for 22,890.5 feet of existing bridges at a cost of \$12,191,835.

Major construction contracts during the fiscal year consisted of the following:

Cole-Callaway counties, Route 54, Bridge No. A-4497 (Missouri River) — Truss deck, navigation lights and paint contract equaling \$2,116,903.

St. Charles-St. Louis counties, Route 115, Bridge No. A-4557 (Twin) (Missouri River) — Bridge decks, navigation lights and paint contract equaling \$7,302,216.

St. Charles County (Mo.)-Madison County (Ill.), Route 67, Bridge No. A-4278 (Mississippi River) (let by Illinois) — Cable stayed span, complete two main piers and transition piers, construct Missouri approach spans contract equaling \$34,587,533.

Steel fabrication inspectors made 520 trips to 24 fabrication shops to inspect bridge steel, and 309 sets of shop drawings were processed.

The division was involved in liaison with consulting engineering firms on 10 bridge projects, which included two major bridges.

Besides structure design, the division rated county and municipally owned bridges as part of the Federal Highway Administration Bridge Replacement and Rehabilitation Program.

Division personnel reviewed programming eligibility for 68 proposed bridge replacement projects, 107 preliminary layouts and 140 sets of plans, specifications and estimates for bridge structures on the Federal Off-System Bridge Replacement and Rehabilitation and Federal Aid Urban Programs.

he Chief Counsel's Office has its headquarters in Jefferson City and five district counsel offices located in Kansas City, Jefferson City, Kirkwood, Springfield and Sikeston. There are 28 attorneys and 27 support staff for a total staff of 55.

As of June 30, 1991, the Chief Counsel's Office had a caseload of 672 cases and 389 Highway and Transportation Commission and other agency administrative proceedings for a total of 1,061 files open.

The following summary of activity by the office covers the fiscal year July 1, 1990, to June 30, 1991:

Condemnation Cases

Fifty-one new petitions were filed from July 1, 1990, to June 30, 1991, involving 247 tracts of land. Disposition was effected in 82 cases, and 81 exceptions were filed. There were 43 jury trials reported. The sum of \$781,701.79 was collected on final judgments where a return from the commissioners' award was due the commission.

Administrative Hearings

Outdoor Advertising — There were 22 hearings conducted involving 44 signs.

Utility Relocation — Six hearings were held. Relocation Assistance — There were no hearings held.

Highway Beautification Cases

Outdoor Advertising — 10 cases were opened; nine were closed.

Junkyard Cases — Two cases were opened; two were closed.

Risk Management Cases

General Liability — Forty-four cases were filed against the commission, and 18 were closed. There were three jury trials reported.

Fleet Vehicle Liability — Nineteen cases were filed against the commission, and 12 were closed. There were three jury trials reported.

Property Damage — Two cases were filed by the commission, and four were closed.

Inverse Condemnation — Four cases were filed against the commission, and four were closed. There was one jury trial reported.

Workers' Compensation Cases — There were 182 claims filed with the Missouri Division of Workers' Compensation, and 146 claims were closed.

Workers' Compensation Subrogation Cases — Six cases were filed against the commission, and nine were closed.

Contractor Cases — Six cases were filed against the commission, and eight cases were closed.

Chief

Counsel's

Office

Miscellaneous Cases — 21 cases were filed against the commission, and 24 were closed.

Discrimination Cases — One case was filed against the commission, and one was closed.

Retirement Board Cases — One case was filed against the commission, and none were closed.

Medical Insurance Plan Cases -

One case was filed against the commission, and two were closed.

Annexation Cases — Three cases were filed against the commission, and three were closed.

Other Agency Claims

Equal Employment Opportunity claims — Four claims were filed against the commission, and five were closed.

Missouri Commission on Human Rights claims — one claim was filed against the commission, and three were closed.

EPA/DNR claims — There were no claims filed against the commission, and none were closed.

Miscellaneous — Numerous contracts were prepared and reviewed, legislative bills drafted and reviewed, and legal opinions rendered.

Construction **Division**

The Missouri Highway and Transportation Department's (MHTD) Construction Division administers construction contracts. After the Highway and Transportation Commission awards construction work, MHTD issues a notice to proceed to each successful contractor and

establishes contract finances. The division's personnel inspect each project so the department keeps aware of the construction progress.

During fiscal year 1991, construction work continued on interstate routes 55, 70 and 270; Route 115 and Route 40 in the St. Louis area; Route 71 in the Kansas City area; Route 54 in the Cole/Callaway/Audrain county area; Route 60 in the Greene County area; and Route 7 in the Cass County area. Construction also continued on Route 60 Current River Bridge in Van Buren and the Route 115 Missouri River bridges between St. Charles and St. Louis counties. Repair work on the A.S.B. Bridge over the Missouri River in the Kansas City area was completed.

Interstate system contracts included upgrading existing dual facilities to interstate standards and implementing the latest safety features. About 79 miles of interstate road are being rebuilt or brought up to the latest safety standards.

The division administered the construction or re-construction of a total of approximately 1,634 miles of roadway. The division administers the Off-System Bridge Repair Program and the Federal Aid Urban Program. These programs have increased during the fiscal year.

Primary and supplementary system contracts involved new construction, widening and resurfacing projects and bridge replacements. This year the contract level course program was doubled as a result of increased funding. The contracts included rural and urban construction; the projects are financed with a combination of federal aid and state funds.

The division provides supportive services for disadvantaged-owned firms. MHTD continues to seek out and certify minority and women contractors to help meet the goals of the disadvantaged enterprise program. Bidders on construction projects are obligated to take affirmative action in using disadvantaged business enterprises. Through affirmative action efforts, \$27,949,400 in state and federally assisted contracts and subcontracts were awarded to disadvantaged business enterprises during fiscal year 1991.

The division maintains a reasonable cost of inspecting construction projects by upgrading equipment, using new technology and computer programs and continuing employee training. The division also participates with contractors in a value engineering program, which helps produce an equal or better product at less cost. To date, the department has saved \$398,081 in the program.

Active projects

| Active projects | | | |
|-----------------------------|----------------------------|----------------------------|-------|
| System federal-aid funds | Awarded in fiscal year '90 | Awarded in fiscal year '91 | Total |
| Interstate | 4 | 12 | 16 |
| Primary | 12 | 42 | 54 |
| Supplemental Off-System | 1 | 8 | 9 |
| Subtotal | 17 | 62 | 79 |
| 100 Percent state funds | | | |
| Interstate | | 0 | 0 |
| Primary | 1 | 0 | 1 |
| Supplementary | 1 | 2 | 3 |
| Subtotal | 2 | 2 | 4 |
| Total projects | 19 | 64 | 83 |

he Design Division prepares the Missouri Highway and Transportation Department's (MHTD) roadway improvement studies. The division also plans and handles the letting of highway project contracts.

MHTD holds meetings and formal hearings to explain the need and purpose of highway improvements and to obtain public comment. Coordination with local, state and federal agencies is required.

During fiscal year 1991, the division obtained tentative location approval on eight highway improvements holding 30 formal location and design public hearings and several public meetings.

As part of its duties, the Design Division uses aerial photography to conduct photogrammetric surveys early in a project. Field surveys supplement this work and give basic information for plan development.

A Computer-Aided Design and Drafting (CADD) system was installed throughout the Design Division in each district office. From July 1, 1990, to June 30, 1991, about 15 percent of the highway design projects involved using CADD procedures. About 90 Design personnel received 72 hours of classroom instruction.

CADD workstations were provided to districts 1, 2, 7, 9 and 10 during this third phase of the CADD installation. About 85 percent of the highway designers and 30 percent of the highway design technicians have access to CADD equipment.

The new procedures are becoming more efficient allowing additional work to be accomplished with the same or a reduced number of personnel. Additional changes are being implemented in surveying methods due to CADD capabilities.

The Design Division administers the department's Value Engineering (VE) Program. Through the program, department personnel apply the value engineering discipline on selected projects, items, procedures and processes to reduce cost and improve productivity.

During 1991, MHTD completed VE studies for one construction project and four other studies on procedures, operations and standards. These studies resulted in an estimated savings of \$4.3 million. Fifteen additional employees were trained through participation in these studies. The department realized an additional savings of \$180,000 from recom-

mendations submitted by contractors on active construction projects.

The Design Division assesses environmental impacts for each project. This includes air quality evaluation, noise studies and cultural, social and economic considerations. The division finished cultural resource survey studies on 39 projects and reviewed more in-house. Extensive field work was completed for two major projects that require an Environmental Impact Statement. These projects are the Page Avenue extension and Route 71 south of Interstate 44 to Arkansas.

Design

Before letting highway improvements, the department acquires right of way, makes arrangements for utility adjustments and obtains permits and licenses from state and federal agencies. The division obtained approval of detail plans for right of way acquisition on 82 projects.

The Disadvantaged Business Enterprise (DBE) program lets businesses owned and controlled by socially and economically disadvantaged individuals or women participate in contracts or subcontracts financed in whole or in part with federal funds. DBE firm participation during fiscal year 1991 was \$24.2 million.

The Design Division also administers several federal-aid programs that provide funding for cities, counties and rail-highway crossing safety improvements.

The Federal Aid Urban (FAU) Program provides federal funding for streets and highway construction in cities and urban areas with more than 5,000 people. About \$18.2 million was obligated in Missouri cities for this program. The FAU funds generally finance 75 percent of the cost of eligible projects with local jurisdictions providing 25 percent matching funds. During fiscal year 1991, 29 projects were approved for construction under this program.

The FAU Bridge Replacement Program financed seven bridge replacement projects in urban areas, at a cost of about \$10.4 million. Bridge replacement funds finance 80 percent of the cost with local agencies responsible for the remaining 20 percent.

The Off-System Bridge Rehabilitation and Replacement Program provides federal funds for bridge repair and replacement on county roads not on a federal-aid system. About \$13.8 million was obligated for projects qualifying for this program with counties providing 20 percent matching funds. During the fiscal year, 93 projects were approved for preliminary engineering charges: 63 were approved for construction, and 65 projects were placed under contract by the counties.

During the fiscal year, 11 bid openings were

held. Projects totaling \$343.6 million were placed under contract. An average of 4.5 bids were received per project.

Prices decreased during the past year with the Missouri average composition cost index being 99.5 compared to base year 1987. The 1991 cost index reflects a 13.8 percent decrease when compared with the 1990 cost index of 115.4.

The following table provides a summary of projects awarded between July 1, 1990, and June 30, 1991.

| 1991 Report | Awards (in million \$) | Miles | Projects |
|--------------------------------------|------------------------|--------|-----------|
| Interstate System | 63.1 | 139.1 | 40 |
| Primary System | 176.0 | 228.1 | 80 |
| Supplementary System and | | | |
| Maintenance Work | 87.1 | 1403.6 | 313 |
| Off-System (County Bridges) | 13.8 | | 63 |
| Federal-Aid Urban (Off State System) | 18.2 | | <u>29</u> |
| | 359.0 | 1770.8 | 525 |

Equipment and Procurement Division

The Equipment and Procurement Division procures and maintains an equipment fleet that efficiently and effectively lets the Missouri Highway and Transportation Department (MHTD) carry out its functions. As of June 30. 1991, the division was maintaining 6,110 units such as passenger cars, trucks, carryalls, tractors, mowers, motorgraders and others.

Fuel used in the fleet during fiscal year 1991 was up about 1.8 percent compared to fiscal year 1990. The average price of gasoline increased 17.1 percent, and diesel fuel increased 19.4 percent.

The department needed 4,236,594 gallons of gasoline and 3,886,357 gallons of diesel fuel to operate the fleet this fiscal year. MHTD also used 9,432 gallons of antifreeze, 90,252 gallons of lubricating oil, 43,781 gallons of hydraulic oil and 61,121 pounds of multipurpose gear oil and lithium grease. The department

contracted for tires and tubes costing \$966,912.30; tire chains costing \$3,839.60; and shop equipment, parts and supplies totaling \$13,483,306.42 during fiscal year 1991.

This division also provides the tools, supplies and materials required in the department's operations. In an effort to give better service to the user divisions, MHTD is using annual contracts for many items instead of periodic purchases.

During fiscal year 1991, the department continued purchasing batteries, pneumatic tires and tubes for direct shipment from the supplier to each district office. This saved in freight

To save money various supplies and equipment are produced at the Headquarters' Garage when labor is available. The Equipment and Procurement Division continued to haul freight and internal mail with department vehicles. A pilot project has been approved to expand the internal freight system in districts 9 and 10. This will reduce the number of trips into the district stockroom by field crews.

Materials purchased for highway maintenance during fiscal year '91 are as follows:

Various Types of Asphalt Gravel/Stone/Chat Paint Reflectorizing Spheres Sodium Chloride Calcium Chloride Agricultural Seed Treated Wood Sign Posts Steel Sign Posts Grader Blades

38,409,840 gallons 1,050,905 tons 655,414 gallons 4,690,280 pounds 55,868 tons 2,702 tons 62,585 pounds 22,700 16,500 472,000 pounds

he Fiscal Services Division includes two major functions: accounting and risk management. General accounting and expenditure control are a direct responsibility of this division. The division maintains all department financial records including the accounting systems for the Missouri Highway and Transportation Employees' and Highway Patrol Retirement System; the Missouri Highway and Transportation Department and Missouri State Highway Patrol Medical and Life Insurance Plan; and the workers' compensation and fleet vehicle liability self-insurance plans.

Accounting responsibilities also include federal billings and collections, legislative and internal budget preparation and all payment processing.

The division processed 226,650 checks during fiscal year 1991. Disbursements for highway and transportation functions equaled \$760,597,213.26. Other state departments disbursements from highway funds equaled \$115,315,560.47. Total disbursements from all funds equaled \$875,912,773.73.

The department is self-insured for workers' compensation and automobile liability. A contracted administrator processes the workers' compensation claims. During this past fiscal year, there were 1,070 workers' compensation cases. And the workers' compensation subrogation recovery unit collected \$156,027.35 involving 48 claims. In-house claims staff processed 736 automobile liability cases. Although not technically self-insured, all general liability claims are processed within the Risk Management office of the Fiscal Services Division. A total of 785 general liability claims were processed during the past fiscal year.

This division also administers the regulations and policies of the Highway and Transportation Department and State Highway Patrol Medical and Life Insurance Plan, which includes the State Furnished Life Insurance Plan and the Optional Life Insurance Plan.
As of June 30, 1991, there were 10,310 health insurance plans, 7,864 state-furnished life insurance plans and 8,035 optional life insurance plans in

force. From July 1, 1990, through June 30, 1991, there were 92,896 health claim payments with \$18,687,721.66 paid in benefits. During the same period, there were 18 life claims under the state-furnished plan and 30 life claims under the optional life plan with \$270,000 and \$1,043,500 in death benefits to survivors.

During the fiscal year, the property damage recovery unit collected \$985,763.65 involving 1,380 claims.

The department's safety program is also part of the Risk Management office of the Fiscal Services Division. The department's safety coordinator supervises the safety program. Safety officers are located in the Kansas City, St. Louis and Springfield districts.

The Fiscal Services Division is also responsible for the Highway Employee and Highway Patrol Retirement System accounting and payroll records. From July 1, 1990, through June 30, 1991, the division processed 41,127 retirement system benefit payments totaling \$33,729,779.82

Fiscal Services Division

Internal Review, Audit and **Systems** Division

The Internal Review, Audit and Systems Division has three areas of responsibility in the Missouri Highway and Transportation Department's (MHTD) cost accounting systems. The first area encompasses operational reviews at the division and district level in such activities as construction, right of way, preliminary engineering, administration, financial management, information systems, planning and transportation. These reviews determine if division and district operations comply with published department procedures and state and federal regulations. This insures the integrity of developed and incurred costs.

The division's second area of responsibility involves auditing final invoices for utility and railroad relocations, federal-aid urban (FAU) projects, bridge replacement off-systems (BRO) projects, transportation grants and miscellaneous billings to the department.

The third area includes developing, revising and maintaining the department's accounting systems and written operating and coding procedures.

Audit totals from July 1, 1990, to June 30, 1991, were as follows:

| Utilities | 68 | \$4,856,151.32 |
|-------------------------------|-----|-----------------|
| Railroads | 66 | 3,568,856.38 |
| Federal Aid Urban | 24 | 26,823,778.38 |
| Bridge Replacement Off-System | 84 | 14,702,272.02 |
| Miscellaneous | 29 | 4,623,240.10 |
| Pre-Audit Contract Reviews | _4 | 12.881,701.32 |
| | 375 | \$67,455,999.52 |

Information **Systems** Division

The Information Systems Division provides mainframe computing facilities, application programming, data base facilities, data entry and support for personal computer and office automation for the Missouri Highway and Transportation Department (MHTD). The division also oversees MHTD's telephone communications systems including voice and data.

The department's foremost automation effort has been the installation of hardware and software for Computer Aided Drafting and Design (CADD). This year, the process has continued into the second phase with installations in MHTD's districts 3, 4, 5 and 6. Because of the first phase's success, MHTD installed the Bridge Division units this year although they had been scheduled for a later date. This second phase also included a planned expansion of the CADD mainframe

to accommodate the additional workstations.

The department upgraded its mainframe computer and acquired a Data Base Management System. This mainframe and data base provides a central common data storage and retrieval system that will be the heart of future applications. Other system changes include upgrading the operating system and the program used to store and maintain all computer programs.

MHTD's office automation efforts include a statewide mail and calendar system on the mainframe, a local area net (LAN) that connects headquarters personal computers and a link that lets LAN workstations have mainframe access. Local area networks were created in five districts, and all can communicate with department mainframes. Communication with other state agencies is available.

A lot of the programming support in the application area is maintaining existing programs. Laws, regulations and other conditions create the need for maintenance. The salary payroll, bridge rating, contractor bid analysis and project status systems had sub-

stantial maintenance.

The second largest area of the division's programming effort is in making data available to users through their workstations. New applications and conversion to the mainframe relational data base are other priorities. The availability of personnel, project and design data to users has been expanded.

A user-developed system was implemented to provide better handling of the data resulting from a contractor's progress on a construction project. This new system reduces work for the engineering office that monitors the construction project. The system also provides data used when paying the contractor.

MHTD acquired an application for a purchasing system and a system to distribute the

merchandise. Planning and installing of the initial system loading have started.

An MHTD training center is used for CADD and office automation classes. The CADD training includes roadway design software (CEAL) and software used for creating other plans (CADAM). Office automation training includes word processing, spread sheets and MHTD's electronic mail system.

MHTD has 900 personal computer workstations and 150 terminals. Although some of these units are not connected to the department's communication network, there are still almost 1,000 users with access to the headquarters' central computers. Almost 12,000 jobs per month are processed through the mainframe.

The quality of materials for **Materials** construction and mainteand nance of the Research state highway system is the Division primary responsibility of the Materials and Research Division. District Materials and Research employees coordinate field inspections for the sampling, testing and approving of materials.

Employees at the central laboratory in Jefferson City test, evaluate and approve materials used in Missouri's highways and bridges. This division's tasks include material specifications preparation; geotechnical investigations; pavement type selection; soil, bridge and pavement condition surveys; aggregate quality control; Portland cement and asphaltic concrete mixtures design and control; special investigations and research.

The central laboratory is an approved and accredited facility inspected regularly by national inspection agencies such as the Cement and Concrete Reference Laboratory (CCRL) and the American Association of State Highway and Transportation Officials Materials Reference Laboratory (AMRL). AMRL inspected the laboratory in July and September 1991.

Many materials routinely tested in the

field also are tested in the laboratory to insure statewide uniform testing procedures. The laboratory also tests materials requiring special equipment and procedures. Efforts to automate some laboratory tests through digital data acquisition have continued.

The division continues to develop and monitor new asphaltic concrete mixtures designed to help prevent premature rutting. Stone mastic asphalt (SMA) was constructed on one project. SMA is a special-purpose surface pavement mixture, which is rut resistant and based on European technology. Other projects are in the development stage. Division personnel conducted a study to evaluate new nuclear density gauges for mix compaction and made recommendations on test procedures.

New product evaluation is an important division function. The need to make quick pavement and bridge repairs has generated "fast-setting" concrete patching materials and overlay systems, which division personnel evaluate. Three projects with an asphaltic overlay containing reclaimed ground rubber tires have been constructed and are being

monitored for performance.

This division also obtains and interprets the subsurface information needed to design highways and bridges. Drilling equipment and crews from the division's headquarters in Jefferson City obtain the data. Crews and equipment are dispatched throughout the state.

Personnel also investigate various

geotechnical matters including foundation stability and settlement of embankments; slide corrections; subgrade and base stabilization; environmental studies; bridge and wall foundations; sinks and mine subsidence; and the use of fly ash and other waste products. Special investigative techniques include electrical resistivity and seismic; down-hole photography and sonar; and field permeability testing.

The department strongly supports the Strategic Highway Research Program (SHRP). SHRP has approved 19 test pavement sections in Missouri. MHTD also has submitted for SHRP's approval many special construction and maintenance effectiveness test sections. Materials and Research is committed to implementing new SHRP-developed technology.

A department representative serves on the SHRP Advisory Committee for Concrete and Structures. The department has established an MHTD/SHRP Coordinating Committee to inform employees about SHRP's work.

The Materials and Research Division has a representative on the technical research committee, which reviews research work and invites problem statements on research from MHTD employees.

The division is continually improving its operations through Quality Improvement training, automation and internal technical training.

From July 1, 1990, through June 30, 1991, a total of 19,344 samples were tested, including those of an experimental or investigative nature.

Commonly used materials inspected, tested and approved during fiscal year 1991:

| Aggregates | 11,450,588 tons |
|----------------------------|---------------------|
| Cement | 500,242 tons |
| Reinforcing Steel | 20,966 tons |
| Culvert Pipe | |
| Corrugated Metal | 188,506 linear feet |
| Reinforced Concrete | 185,021 linear feet |
| Vitrified Clay | 584 linear feet |
| Joints - Bituminous, Fiber | 260,280 linear feet |
| Joints - Rubber | 12,090 square feet |
| Joints - Metal | 218,550 linear feet |
| Guard Rail | 216,379 linear feet |
| Posts, Metal | 57,522 posts |
| Precast Units | • |
| Median Barriers | 4,676 units |
| Concrete Bridge Beams | 1,142 units |
| Concrete Inlets | 1,424 units |
| Concrete Manholes | 258 units |
| Piling and Round Posts | 3,600 linear feet |
| Bituminous Material | |
| Cutback | 14,905,373 gallons |
| Penetration | 18,213,075 gallons |
| Emulsified | 27,054,763 gallons |
| Asphalt Cement | 38,426,051 gallons |
| Paint | 617,715 gallons |
| | |

he Maintenance and Traffic Division is responsible for the maintenance and traffic operations of the 32,335-mile state highway system. The division also maintains 20 rest areas along the interstate system, 67 roadside parks on the primary and supplementary highways and 385,000 acres of highway right of way.

Since 1974, the department has built commuter parking lots along many high-traffic highways to conserve energy. As of September 1991, there were 91 parking lots with a total of

5,518 parking spaces.

One of the division's major expenses is maintaining low-type bituminous surfaced roads. In calendar year 1991, the department surfaced 2,242.8 miles of low-type roadway under the maintenance leveling course program. In addition, 1,220.2 miles were resurfaced by contract under the contract leveling course program, and 45.4 miles of roadway were surfaced under the contract sealcoat program.

In 1986, the department began installing liquid calcium chloride or liquid magnesium chloride dispensing units at maintenance facilities along high-volume interstate and primary routes. Liquids are applied to salt and other abrasives to make these materials more efficient in removing snow and ice from the roadway. In fiscal year 1991, the department added 31 locations under the program.

Contracts were awarded for seven maintenance buildings totaling about 55,800 square feet during fiscal 1991. Contracts for 13 salt storage domes with a total capacity of 34,800 tons were awarded.

The division is in the middle of a five-year program to remove underground fuel tanks because a small leak in the underground fuel tank could gradually contaminate the soil, groundwater and environment. In lieu of the underground tanks, the division is placing above-ground tanks within above-ground concrete containments. The concrete containment will contain any spilled fuel. All underground tank removals will be completed by December 1993. Approximately 700 tanks have been removed at this time. The division is also improving its methods in handling and storing hazardous waste. At some locations salt domes are being used to totally contain salt in storage so the environment will not be harmed.

In 1988, the department, cooperating with the Department of Corrections and Human Resources, employed incarcerated personnel in

maintenance activities. These crews perform labor-intensive duties such as landscape planting and maintenance and erosion control.

By using incarcerated people, the department benefits by having an economical labor pool complete duties that would be neglected. The incarcerated personnel benefit by participating in a typical work environment. The inmates are from minimum security institutions, have no history of escape and are within two years of release. We now have crews working in districts 1, 4, 5, 8 and 10 and the Highway Gardens.

Maintenance

and Traffic

Division

Along with the University of Missouri-Columbia and Department of Agriculture, the division sponsored a one-day training program on pesticides for 390 employees. The program trains employees to properly use pesticides and will improve the safety and effectiveness of pesticide use on department right of way. This program began in 1987. More than 600 employees are certified.

During this fiscal year, Missourians showed much interest in the department's Adopt-A-Highway program. This program, introduced in 1987, increases public awareness of environmental problems along Missouri highways by letting the public adopt highway sections to mow, beautify or clean-up. By April 1989, there were 1,000 adoptions. As of June 30, 1990, there were 4,231 adoptions covering about 7,000 miles of state highways. By 1991, there were 5,129 adoptions covering about 7,873 miles of state highways. Most adoptions are for litter control, but more than 125 adoptions are for beautification plantings.

The public's desire to improve the appearance of highway right of way helped develop the department's Growing Together Program. Growing Together is a cooperative effort between the department, state and local governments and private groups to enhance the looks of state highways. MHTD and the departments of Conservation and Corrections and Human Resources help local agencies and groups in beautification projects such as landscaping interchanges and intersections. There are currently 25 projects.

In the Growing Together program, the groups can plant shrubs, trees, flowers and other

greenery. Local city or county governments propose areas to be developed. After MHTD approves the area, the local government or civic group funds the project. The department helps with design and bidding. When possible, incarcerated people plant trees, shrubs and flowers. The Conservation Department gives seedlings to plant along the beautification area borders. There are active projects in Jefferson City, Columbia, Warrensburg, Cameron, St. Louis City, Springfield, Kansas City, St. Louis County and Cape Girardeau.

http issues overweight and overdimension permits through this division. The permits insure that vehicles exceeding the legal dimension and weight limits do not cause structural damage to bridges and pavements. There were 88,192 overdimension, overweight and overdimension/overweight special permits issued during the fiscal year. District offices issued 11,620 or 13 percent of the permits. Included in the total were 1,689 permits issued to governmental agencies or subdivisions at no charge.

Division personnel do routine inspections of all span-type bridges on the state highway system. Besides routine inspection, the hanger pin assembly unit on bridges is ultrasonically tested to detect pin failures every other year.

The division uses two under-bridge inspection units called "Snoopers." Both Snoopers performed fracture critical bridge member inspections and indepth inspections on approximately 600 bridges this past year. All submerged portions of bridges are inspected by the dive team at least once every five years.

A school to train off-system bridge inspectors was held in October 1991; 100 inspectors attended. This included representatives from the Kansas Department of Transportation and Missouri cities and counties. Division repair crews completed structural repairs on 215 bridges, and division paint crews painted 175 bridges during fiscal year 1991.

Activities funded from 402 Program funds under 3+ Standards of the Missouri Highway and Safety Program and coordinated by the department are as follows.

Bridge Engineering Assistance Program —
This program helps political subdivisions obtain information on the structural adequacy of bridges under their jurisdiction. Two consultants retained by the Highway and Transportation Commission perform these services.

The consultants determine structural adequacy, establish posted weight limits and develop priorities for bridge repair or replacement. Structural adequacy reports and inventories were conducted on 99 bridges from October 1990 to September 1991 at an average cost of \$613 per bridge.

Traffic Engineering Assistance Program — This aids political subdivisions who have traffic engineering problems that need review but don't have personnel to do these reviews. Two consultants retained by the commission perform the service; they completed 15 studies in political subdivisions from October 1990 to September 1991. The average cost was \$4,905 per study.

A total of 65 traffic signals were installed at intersections statewide. Ten of the 65 intersections were signalized by permit, and 17 intersections were signalized by maintenance forces or maintenance contracts.

The division continued interconnecting various traffic signals for traffic progression. New equipment to control and monitor traffic signals from district offices was put in service.

Contracts were also let to replace many older, two-way mobile radios and to expand the use of mobile radios in various divisions and district positions. The program to replace all fixed relay station equipment continues.

MHTD opened the new Headquarters Sign Shop May 1, 1988. Since its opening, more than 461,000 new signs have been made. MHTD's Reclamation Plant salvaged about 197,300 signs.

Sheltered workshop employees are used to reclaim button copy letters. This process saves time and money in sign production and provides the workshop with desirable duties. Since Nov. 20, 1990, it has resulted in a savings to the department of \$57,300.

In calendar year 1990, the department placed 87,800 miles of centerline, laneline and edgeline stripes, using approximately 770,000 gallons of paint. To complete the work, the department used 22 over-the-road stripers. The operation includes a nurse truck, attenuator trucks and a lead truck.

During the striping season, bulk paint storage facilities were started in Kansas City and Macon. These assemblies consist of two bulk paint tanks that can hold 10,000 gallons each of white and yellow paint. In 1992, the department will set up three more bulk paint

operations in St. Joseph, Springfield and Sikeston.

In calendar year 1990 the department placed about 19,000 miles of no passing zones.

The division coded and placed in the accident data record system 72,526 accidents on the state highway system during the fiscal year 1991. The Missouri State Highway Patrol and about 565 city and county enforcement agencies provided the reports.

he division continued its 120/Medium Improvement Program in fiscal year 1991. investigated eight locations where more accidents than normal had been occurring and implemented corrective measures at the spots.

Maintenance and Traffic investigated 100 locations that had 20 or more accidents throughout a three-year period and evaluated countermeasures for possible funding under Section 209 of the 1973 Federal Highway Act. This division provided the Planning Division with 28 locations to be put on the Right of Way and Construction Program at an estimated cost of \$4.8 million.

The 42nd Annual Traffic Conference was held April 22-24, 1991, in Columbia. County, city,

state and federal government representatives attended this two-day conference on solving traffic problems. Before the conference, Northwestern University Traffic Institute personnel presented a workshop on "Roadside Design — The Clear Zone Concept."

The program of monitoring peak period freeway traffic in the Kansas City and St. Louis areas was continued during 1991. The location and severity of congestion on about 170 miles of freeways was documented.

Low capital improvement projects have been or are being implemented. These include the following:

1. A test closing of the ramps at Interstate 70 and Riverview in the St. Louis area has been completed.

2. Lane delineation changes on northbound Interstate 270 approaching Interstate 70 in the St. Louis area was completed.

Lane delineation changes on northbound Route 71 at Blue Ridge Boulevard in the Kansas City area were completed.

A freeway incident management plan was developed for both Kansas City and St. Louis areas with initial stages under consideration and final testing.

Maintenance materials used during calendar year 1991:

| Material | Amount used | | |
|-----------------------------------|-------------|---------|--|
| Various Types of Asphalt | 35,614,000 | gallons | |
| Various Types of Aggregate | 1,178,400 | tons | |
| Sodium Chloride (winter 89-90) | 131,977 | tons | |
| Calcium Chloride (winter 89-90) | 3,079 | tons | |
| Liquid Calcium or | | | |
| Magnesium Chloride (winter 89-90) | 396,410 | gallons | |
| Seed | 47,140 | pounds | |

Personnel Division

The Personnel Division provides assistance to the Missouri Highway and Transportation Department (MHTD) in matters such as employment; college recruiting; employee training and development; wage and salary matters; personnel policy; affirmative action administration; employee ations; and personnel records and maintenance. Personnel professionals

relations; and personnel records and statistics maintenance. Personnel professionals are located in the Main Office and districts 4, 6 and 8.

The division develops and implements programs to ensure that competent job applicants seek employment with the department, employees are properly trained and fair and productive working conditions exist.

The department is an equal opportunity employer and considers affirmative action a priority. The Personnel Division and MHTD's districts strive to attract qualified minority and female applicants. The division monitors Equal Employment Opportunity (EEO) progress and keeps the headquarters office and districts informed. The division also monitors requirements of Title VI of the Civil Rights Act of 1964 to ensure that disadvantaged and womenowned business enterprises may participate in state and federally assisted programs.

New employee orientation and training is conducted through the department's supervisors, the Personnel Division and outside specialists.

Employees may attend training conferences and seminars related to their work. MHTD's operational divisions provide technical skills training. The Personnel Division supplements employee training by conducting supervisory training programs.

In January 1989 the department implemented a three-year Graduate Engineer Development Program for new civil engineers, which continues to be administered statewide. The program exposes the new engineer to the department's disciplines, policies, procedures and personnel in preparation for advancement. Each graduate engineer has a training plan for the first three years of employment.

MHTD has expanded its summer hire program to include summer internships for civil engineers. The internship program not only helps the department meet its peak season needs in the technician or para-professional areas but also lets students gain

experience and learn more about department careers. MHTD employs interns statewide in the various engineering divisions.

The department tries to maintain a positive work environment for high employee morale and motivation. All personnel transactions are reviewed to guarantee equal and uniform salary administration and policy application.

The department implemented a new job evaluation system July 1, 1989. The Personnel Division keeps the department's job specifications current by conducting approximately 100 job audits per year.

The division processed 262 claims for unemployment compensation during the fiscal year and obtained 34 denials out of 45 protested claims. The division did not protest 217 processed claims because the claimants were temporary employees who became unemployed through no fault of their own and were entitled to unemployment compensation.

The division maintains centralized personnel records. The personnel data is used for employee profile, employee trends and staffing needs analysis. Computer applications have improved personnel record-keeping.

The department had 5,985 salaried employees and 807 part-time and seasonal employees on June 30, 1991. The department hires temporary and emergency employees for such duties as snow removal.

The Personnel Division held pre-retirement seminars for headquarters employees and their spouses.

rom July 1, 1990, to June 30, 1991, the division processed 220 employees for retirement. Forty-nine were 55 to 59 years old with 30 or more years of service. Six were between the ages of 55 and 59 with 15 or more years of service, and six were between the age of 55 and 64 with 10 or more years of service. Also 111 employees between the ages of 60 and 64 with 15 or more years of service were processed, and 21 employees were 65 or older with four or more years of service.

Fifteen employees qualified for long-term disability and four qualified for normal disability. Eight vested members also elected to begin annuity benefits. The Highway Employees' and Highway Patrol Retirement System currently is paying benefits to 2,951 department retirees and survivors; 64 of these are long-term disabilities.

The average salaried MHTD employee has given almost 15 years of service to the department.

he Planning Division's efforts in fiscal year 1991 focused on planning for the state's future highway system. To do this, the division collected and maintained financial and roadway information, determined existing and future highway needs and developed planned improvements and financial programs to fulfill those needs.

The Long Range Planning Section provided information for use by Wilbur Smith Associates to begin the process of developing a Total Transportation Plan. The section developed alternative funding packages to address the identified 10-year needs of Nov. 3, 1989. And it performed financial analyses to distribute funds for developing the fiscal year '92 Highway Right of Way and Construction Program and to make optimum use of funds in the letting process. The section performed many economic analyses for contracts, began the process of updating statewide flood data and monitored various items such as bridge condition, safety and construction prices.

The Programming Section prepared a tentative 1992 Highway Right of Way and Construction Program that shows improvements scheduled for the next 11 years. The section also prepares monthly updates on the progress of Proposition A.

The comprehensive planning process continued in the state's six urbanized areas. This process requires cooperation between the department, local jurisdictions and metropolitan planning organizations. Through the process, the department develops and updates multimodal, long-range plans and compiles improvement programs in the urban areas of Kansas City, St. Louis, Springfield, St. Joseph, Columbia and Joplin.

The Traffic Section made approximately 4,000 portable vehicle counts and collected continuous count data at 102 permanent sites on the state's 32,000 miles of highways in fiscal year 1991. Speed surveys to determine compliance with the 55 mph speed limit were conducted at 34 statistically selected locations throughout the state. Vehicle miles of travel increased 2.8 percent from 1989, making 1990 the ninth year in a row of record-increasing travel in Missouri.

Automatic vehicle classification data was collected at 100 sites, and trucks were weighed with weigh-in-motion equipment at 30 sites for department information. Automatic vehicle classification and weigh-in-motion data was collected at 18 sites for the Strategic Highway Research Program (SHRP). Automated

pavement condition survey information was used to develop the department's resurfacing program. The division prepared the 1991 Pavement and Service Ratings Book for Interstate and Primary Highways.

The section also prepared an annual vehicle report for 1990. The report includes information on travel for Missouri's roads and streets. Through roadside interviews with motorists, MHTD gathered selected travel characteristics at five locations within the state. The information from these studies was used to determine needs and plan improvements for the locations.

Planning

Division

The mapping and drafting area of the Systems Support Section develops and publishes the official state map and county and city maps. It also prepares artwork and graphic displays for MHTD. The division produced 2.5 million copies of the 1991-92 Official Highway Map.

Systems Inventory collects and maintains current and historical project data including roadway information and construction costs. Data regarding system mileage and log miles are also maintained.

Cities of more than 5,000 population received assistance in updating their functional classification and federal-aid systems. Information was compiled to update the National Highway Performance Monitoring System in urban areas.

Research to determine the resilience of subgrade soils to satisfy AASHTO guidelines will be extended, and new equipment will be purchased because AASHTO changed its specifications.

Research on the wearing surface of the Poplar Street Bridge will be continued since no lasting solution has been developed. Two studies are being conducted to determine the drainage and layer coefficients of granular surfaces. Research is in progress to evaluate the weight on the steel and concrete girder bridges in Missouri, develop improvements to two-lane highways and evaluate them in order of importance.

The Technology Transfer Assistance Program continued to link the sources of technology and the agencies that can make use of it. Through workshop instruction, guidesheets, videos and quarterly newsletters, the program has encouraged field use of technology. The cities and

counties have become more aware of the available program, and a positive relation-

ship continues to develop.

Additional workshops concerning Herbicide Training, Placement of Pre-Mix Asphalt and High-Accident Location Identification and Correction were presented this past season.

The Finance Section maintains historical data and projections of income and expendi-

tures for the department. Financial information is provided for cash management, legislative fiscal notes and various fiscal scenarios. Financial vehicle registration and fuel usage data were provided to the Federal Highway Administration for inclusion in a national summary of highway statistics.

Public Affairs Division

The Public Affairs Division keeps Missouri
Highway and Transportation Department (MHTD)
employees and the public informed about department activities.
Public interest in highway and transportation matters continued at a high level during fiscal year '91, and the public Affairs Division responded by

Public Affairs Division responded by increasing the dissemination of information. To do this, the division used news releases, magazines, brochures, leaflets, fact sheets, videos, slide films, exhibits and displays, radio and television programs and public speaking engagements.

Public Affairs personnel keep in contact with the state's news media and routinely distribute information to the media.

During fiscal year 1991, the division prepared and distributed about 125 news releases. In addition, numerous special articles, feature stories and photographs were supplied to magazines, newspapers and other publications. July 1, 1989, the division contracted with an external statewide newspaper clipping service to keep officials informed of department coverage and comment. The division distributes copies of these clips to division and district offices.

The division often helped in the groundbreaking and formal opening ceremonies of major road and bridge projects. Division personnel developed speeches, brochures and the department's annual report.

The division monthly published and distributed the "Missouri Highway and Trans-

portation NEWS." The MHTD NEWS is the department's employee newspaper with a circulation of more than 10,000.

Per month, the division answered approximately 1,000 mail and telephone requests about maps, road information, routings, educational material and films.

The division supervised the distribution of more than one million highway maps, many of which were given out at the Missouri State Fair. Public Affairs personnel helped staff the annual fair exhibit in the Highway Gardens, a roadside park on the fairgrounds.

The department's technical and video library also continued to be housed in the division.



for people displaced by land acquisition. It also disposes right of way no longer needed for state highway purposes and assists the Chief Counsel's Office in preparing condemnation cases.

During fiscal year 1991, the cost of right of way acquired for highway construction totaled \$24,346,350.83.

The division acquired 867 parcels of land. This number includes 732 parcels acquired by negotiated settlement and 135 by condemna-

tion, or 84 percent acquired by negotiation and 16 percent by condemnation.

Total payments of \$876,587.27 were made in fiscal year 1991 under the Relocation Assistance and Payment Program to help relocate displaced families and business and farm operations. During the fiscal year, 173 relocation claims were processed and paid.

During fiscal year 1991, the division obtained 660 appraisals. Each month an average of 55 appraisals were produced. The division's total appraisals also includes 504 damage statements prepared on parcels with an estimated value of \$2,500 or less.

The sale of improvements located on right of way acquired for highway construction and excess property totaled \$59,166.60 during fiscal year 1991. And rental of airspace, excess property and property acquired for future construction equaled \$380,577.51.



Aviation section personnel give information or technical advice to airport sponsors and others who are interested in the establishment, improvement or promotion of aeronautical facilities.

The aviation section provides financial assistance to cities, towns, counties or airport authorities in the state through two grant programs. The capital improvement grant program gives financial assistance for planning and construction or expansion to sponsors of publicly owned airports. Funds under this

program are granted on a 50 percent state/50 percent local matching basis.

Under the airport maintenance program, funds may be granted to airport sponsors on a 75 percent state/25 percent local basis for maintenance on runways, taxiways and parking aprons and for emergency repairs or safety-related items. This program's financing is derived from the fuel tax applied to aviation gasoline.

A portion of the fuel tax revenue is used for the annual publishing and distribution of the Missouri Aeronautical Chart and Airport Directory. The aviation section published 12,000 copies of the chart/directory at a cost of \$6,485.

As a result of the Airline Deregulation Act of 1978, the aviation section monitors the small community essential air service program that is regulated by the Department of Transportation. A requirement of the act is that all actions affecting the air service to smaller communities must be coordinated with state aviation agencies.

During fiscal year 1991, the section performed 170 airport inspections and 170 obstruction evaluations; three objections were filed.

Missouri has 362 airports and five seaplane bases. Of these, 140 facilities are open to the

public, and 227 are for restricted use. There are 5,998 registered aircraft and 12,061 registered pilots in the state. Eight airports provide scheduled air transportation and enplaned about 14 million passengers annually.

The aviation section received and processed 37 applications for financial assistance under the airport capital improvement and maintenance programs. The section provided 14 capital improvement grants for a total of \$372,293 and three maintenance grants for a total of \$87,641. Aviation's capital improvement grant program is an 18-month program. Consequently, data for this report is a combination of fiscal year 1990 and fiscal year 1991 projects.

Third State Economic Development projects were in progress at seven Missouri airports during fiscal year 1991. A total of \$254,437

was expended for these projects.

In May 1989, the Federal Aviation Administration (FAA) selected Missouri, along with Illinois and North Carolina, to conduct a block grant demonstration program. Under this program, MHTD's aviation section will administer all federal airport improvement funds for airports that enplane less than 10,000 passengers per year. For federal fiscal year 1991, the aviation section received \$14 million in federal money. The section administered seven projects during fiscal year 1991 totaling \$1,934,247. The demonstration program extends through Sept. 30, 1992. The purpose of the program is for the states to demonstrate they can administer the federal aid program for smaller airports more efficiently than the FAA.

The Missouri State Airport System Plan Update was submitted to the FAA for review

and approval.

n 1990, the aviation section began obtaining aircraft activity counts at selected airports. The activity counts provide more accurate data for the Missouri State Airport System Plan. The counts are obtained by placing acoustic monitors near runways four times a year. The four counts are then calculated for an annual operations number for each airport. During fiscal year 1991 counts were obtained at 30 airports.

The aviation section is involved with the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Aviation, National Association of State Aviation Officials (NASAO) Finance Committee, NASAO Strategic Planning Group, St. Louis Regional Commerce and

Growth Association Aviation Committee, and the St. Louis Airspace Users Advisory Committee. The section also monitors the Scott Air Force Base Joint Use Study.

Railroads

The railroad section provides, maintains and improves rail transportation within Missouri. The section administers rail planning programs, rail project implementation, the Amtrak 403(b) program and the railroad-highway grade crossing program.

In fiscal year 1991, the rail planning activities program carried out many different items

including the following:

*railroad data collection to be included in the next scheduled Rail Plan Update;

*branch line abandonments;

*the monitoring and implementation of federal rail legislation;

*continuation/expansion of the Local Rail Freight Assistance program; and

*other general railroad matters.

The rail project implementation program involved three rail projects. They are as follows:

*5.5 miles, Green Hills Rural Development Inc., Locust Creek to Swan Lake Refuge — A rehabilitation project started in May 1990 and involved cross-tie insertion, additional ballast, surfacing and lining. The project is nearing completion.

*1.6 miles, Scott City Port Access Project — Excavation work began in June 1991 with actual rail line construction to begin in July 1992.

*21.7 miles, Columbia to Centralia — A project application was sent to the Federal Railroad Administration in December 1990 requesting fiscal year '91 discretionary funds in the amount of \$210,000 for additional rehabilitation. The project received approval in March 1991, and the subsequent grant was executed in May 1991. The rehabilitation will begin in June 1992.

Missouri provides rail passenger service between St. Louis and Kansas City through the Amtrak 403(b) program. The "Ann Rutledge" and the "St. Louis/Kansas City Mules" trains are subsidized by a ratio of 65 percent state funding and 35 percent Amtrak funding. During fiscal year 1991, these two trains carried 189,632 passengers.

Passenger station improvement activities included a passenger waiting area at the

Warrensburg station. Also, efforts continue with the city of St. Louis and Amtrak re-

garding a multi-modal transportation facility in St. Louis.

The Transportation Division is the communication link between the department and rail-roads for projects involving railroad-highway crossings.

Grade separation and at-grade crossings form the majority of projects administered by this division. Grade separation projects, such as highway bridges over railroads, involve personnel in the Chief Counsel's Office and several divisions including Planning, Right of Way, Bridge, Design and Construction. These divisions' efforts must be coordinated and communicated to the railroad to secure approval of plans and execution of agreements and easements. The Transportation Division is pursuing 26 projects improving or constructing highways over or under railroads.

The Transportation Division is also responsible for coordinating and administering a program to improve at-grade crossings. This fiscal year, \$3.9 million of federal highway funds were apportioned to Missouri for improving safety at railroad-highway crossings. About \$3.4 million will be used to install warning devices such as flashing light signals, gates and bells. About \$500,000 will be used to help pay railroads to install high-type crossing surfaces.

Transit

The transit section assists in the planning, developing and operating of the state's public transit and specialized paratransit systems. This function is carried out through the administration of state and federal programs relating to general public transportation and specific programs for the elderly and handicapped.

The Missouri Elderly and Handicapped Transportation Assistance Program provided state financial assistance for 158 nonprofit organizations offering transportation services to the elderly and handicapped at below-cost rates. For fiscal year 1990, program appropriations were \$1,471,755.

The 10 area agencies on aging received \$795,002 in state funds to supplement federal funds for elderly transportation. An additional \$131,853 was available to other organizations working with older Missourians. Altogether 60 elderly organizations received assistance.

State funds totaling \$544,900 were available to 98 sheltered workshops, group homes and other handicapped facilities to assist in transportation.

The department helped subsidize

3,713,782 special transportation trips. The total cost of these trips was \$9,365,982.

Thirty small urban and rural general public transit systems received financial and technical support from the department. Federal financial assistance is available under Section 18 of the Federal Transit Act, as amended, and allocated to the various systems by the department.

he small urban and rural systems had a combined operating budget of \$6,750,000; \$1,985,000 was provided by the department. An additional \$450,000 in federal funds was used to purchase equipment.

The systems operated 295 vehicles, logged 6,500,000 miles and provided more than 2,100,000 trips.

Section 9 of the Federal Transit Act provides formula capital and operating assistance to transit systems in urban areas of more than 50,000 population. The department administers this program for Columbia, Springfield, St. Joseph and Joplin.

In fiscal year 1991, the department approved payment of \$1,950,000 in federal aid to the transit systems in Columbia, Springfield and St. Joseph. These systems operated 42 transit buses and provided 4,300,000 trips.

Capital assistance to nonprofit organizations and public entities giving transportation service to the elderly and persons with disabilities is provided by Section 16 of the Federal Transit Act of 1991. In fiscal 1991, the program provided \$1,206,197 in federal assistance. This was matched with \$301,549 in local funds to purchase 66 vehicles for 40 organizations, many of which were equipped with special equipment to insure compliance with the Americans with Disabilities Act of 1990.

There are 138 organizations operating 451 Section 16 vehicles statewide, providing more than 3,000,000 trips to eligible clients.

The Americans With Disabilities Act of 1990 has had an effect on the work load of the transit staff. Increased responsibilities include reviewing and certifying, on behalf of the state to Federal Transit Administration (FTA), the implementation of Complementary Paratransit Service for fixed route providers and insuring full compliance of vehicles and facilities for all other agencies funded through this department.

The transit section gave staff support for the Coordinating Council on Special Transportation. The council is reviewing special transportation plans statewide and will make recommendations based upon these plans. The council

continues to investigate problems in the delivery of special transportation services in Missouri and recommend solutions to the governor and General Assembly.

Transit also administers the Rural Transportation Assistance Program — a training and technical assistance function funded by the FTA. Training courses offered include defensive driving, CPR and first aid, passenger assistance techniques and emergency procedures. Technical assistance is offered in the areas of vehicle procurement and maintenance. During the fiscal year 1991, there were 80 on-site driver training programs offered involving about 1,050 drivers.

The transit section has made grant applications for national discretionary financial assistance under Section 3 of the Federal Transit Act. The first application was funded at \$2,555,550 while the second application was funded with \$785,000 Section 3 assistance. A third application is awaiting FTA approval. Both grant applications funded the purchase of city transit buses, mini-bus, vans and computer and radio equipment.

The transit section is preparing a fourth application to be submitted for federal consideration in late 1992.

The transit section will be funding the transit planning efforts of the Metropolitan Planning Organizations (MPO) in areas of more than 50,000. Recent changes in federal law now require the department to received federal

Section 8 planning assistance and pass on these funds to the MPOs. Section 26(A)(2) of the Federal Transit Act may be used to fund special transit studies as well.

Waterways

Waterways provides technical assistance to Missouri port authorities in promoting private capital investment, in increasing the volume of commerce and in establishing a free trade zone within their port districts. Every city or county situated upon a navigable waterway may form a port authority. Fifteen port authorities have been formed along the Missouri and Mississippi rivers. The department is frequently contacted by interested communities concerning the port authority program.

During fiscal year 1991, a capital improvement project was completed at the St. Louis City Port Authority. The value totaled \$1.18 million. Work continues statewide on six port capital improvement projects that were funded during 1986, 1988, 1989 and 1990.

In addition to providing techn cal assistance, funding was also provided to assist port authorities in the administration of their port development programs. During the year, \$294,300 in grants was expended by 12 port authorities. These funds are used by the recipients for managerial, engineering, legal, research, promotional, planning and other nonconstruction-related expenses.

Port development administrative grants

| Howard/Cooper County Regional | \$ 28,840 |
|-------------------------------|-----------|
| Jefferson County | 14,715 |
| Kansas City | 25,900 |
| Lewis County-Canton | 5,885 |
| Marion County | 5,275 |
| Mississ:ppi County | 28,840 |
| New Bourbon | 8,710 |
| New Madrid County | 38,850 |
| Pemiscot County | 45,615 |
| Southeast Missouri Regional | 45,615 |
| St. Joseph Regional | 10,740 |
| St. Louis City | 16,775 |
| St. Louis County | 18,540 |
| TOTAL | \$294,300 |

Statement of receipts and disbursements for fiscal year 1991

| Highway | Receipt | Disbursements |
|--|--|----------------------------|
| Basic Revenue: | | |
| Motor Vehicle License | 171,293,466.70 | |
| Dept. of Economic Development | 1,927,962.46 | |
| Motor Vehicle Use Tax | 29,837,0003.03 | |
| Drivers License Fees | 12,019,984.16 | |
| | 2,311,838.38 | |
| Motor Vehicle Inspection Fees | | |
| Motor Fuel Tax Receipts | 296,775,331.77 | |
| Vehicle Sales Tax Receipts Sub-Total | <u>55,669,158.63</u> 569,834,745.13 | |
| | 505,004,745.10 | |
| Other Revenue: | 0.040.700.00 | |
| Misc. Escrow Fees | 2,840,733.28 | |
| Reciprocity Fund Interest | 171,294.21 | |
| Road Fund Interest | 6,403,354.43 | |
| Other Miscellaneous | 11,786,640.36 | |
| Sub-Total | 21,202,022.28 | |
| Federal Reimbursement: | | |
| Federal Highway Administration | 297,706,257.63 | |
| Corps of Engineers | 0.00 | |
| Sub-Total | 297,706,257.63 | |
| | | |
| Construction | | 440,306,786.76 |
| Maintenance | | 203,834,204.18 |
| Administration | | 62,409,872.58 |
| Refund of Motor Fuel Tax | | 27,139,392.10 |
| Refund of Aviation Fuel Tax | | 42,351.95 |
| Legal Expense Fund | | 180,421.76 |
| Highway Revenue Generating Fund | | 2,430,020.00 |
| O.A.S.I. (Highway) | | 12,250,103.74 |
| | | |
| Other State Departments O.A.S.I. | | 9,118,822.72 |
| Other State Departments (From Hwy. F | und) | 106,196,737.75 |
| TOTAL FOR HIGHWAY | 888,743,025.04 | 863,908,713.54 |
| Transportation | | |
| Administration | | 1,243,439.61 |
| Transit | | 5,972,972.50 |
| Rail | | 1.505,372.61 |
| | | |
| Aviation Water | | 2,084,933.08 255,932.92 |
| General Revenue Fund | 4,397,514.00 | |
| Federal Fund | 23,130,351.32 | |
| | | |
| State Transportation Fund Aviation Trust Fund | 914,703.26 | |
| Aviation Trust Fund | <u>295,283.98</u> | |
| TOTAL FOR TRANSPORTATION | 28,737,852.56 | 11,062,650.72 |
| Mississippi River Parkway Commission | 9,000.00 | |
| Third State Building Trust Fund | 13,041,444.87 | |
| Third State Building Fund | 642,000.00 | |
| GRAND TOTALS | 931,173,322.47 | 875,912,773.73 |
| /20 | > | |

Our mission is to provide a quality transportation system that responds to Missourians' demands and enhances the state's growth and prosperity.



